

COSATI SUBJECT CATEGORY LIST

Office of Science and Technology  
Washington, D.C.

December 1964

AD-612 200

# **COSATI Subject Category List**

**Federal Council for Science and Technology**

**December 1964**

**FIRST EDITION**

---

**OFFICE OF SCIENCE AND TECHNOLOGY**

**Executive Office of the President**

---

REPRODUCED BY  
**NATIONAL TECHNICAL  
INFORMATION SERVICE**  
U.S. DEPARTMENT OF COMMERCE  
SPRINGFIELD, VA. 22161

# NOTICE

THIS DOCUMENT HAS BEEN REPRODUCED  
FROM THE BEST COPY FURNISHED US BY  
THE SPONSORING AGENCY. ALTHOUGH IT  
IS RECOGNIZED THAT CERTAIN PORTIONS  
ARE ILLEGIBLE, IT IS BEING RELEASED  
IN THE INTEREST OF MAKING AVAILABLE  
AS MUCH INFORMATION AS POSSIBLE.

## **FOREWORD**

The Subject Category List presented herein has been endorsed by the Committee on Scientific and Technical Information (COSATI) of the Federal Council on Science and Technology, as a uniform subject arrangement for 1) the announcement and distribution of scientific and technical reports which are issued or sponsored by Executive Branch Agencies, and 2) for management reporting. The List is a two-level arrangement consisting of 22 major subject fields with a further subdivision of the fields into 178 groups. Scope notes are included for each group.

Abstracts, citations and the like, for announcement purposes, can be gathered into these broad subject fields or groups for display to the user. For distribution purposes, these fields or groups may likewise be employed. Similarly, the fields or groups may be useful for arranging projects, tasks, or programs for management reporting purposes.

**Preceding page blank**

The Task Group which developed the List was created by COSATI with representation from:

Atomic Energy Commission -  
Department of Agriculture -  
Department of Commerce -

Department of Defense -

Department of Health, Education  
and Welfare -  
National Aeronautics and Space  
Administration -

Donald D. Davis  
Ann F. Painter  
Margaret S. Hicks  
Paul C. Janaske, Chairman  
Peter Sofchak  
Terry Gillum  
Paul H. Klingbiel

Peter Olch

Hubert E. Sauter

The Task Group will now devote its efforts to the establishment of rules or guidelines for the development of vocabulary terms, and to develop a common vocabulary or thesaurus for indexing.

## CONTENTS

	Page
Field Structure	1
Field and Group Structure	2
Scope Notes	8
Index to Scope Notes	42

## COSATI Subject Category List

### Field Structure

- 01 Aeronautics
- 02 Agriculture
- 03 Astronomy and Astrophysics
- 04 Atmospheric Sciences
- 05 Behavioral and Social Sciences
- 06 Biological and Medical Sciences
- 07 Chemistry
- 08 Earth Sciences and Oceanography
- 09 Electronics and Electrical Engineering
- 10 Energy Conversion (Non-propulsive)
- 11 Materials
- 12 Mathematical Sciences
- 13 Mechanical, Industrial, Civil, and Marine Engineering
- 14 Methods and Equipment
- 15 Military Sciences
- 16 Missile Technology
- 17 Navigation, Communications, Detection, and Countermeasures
- 18 Nuclear Science and Technology
- 19 Ordnance
- 20 Physics
- 21 Propulsion and Fuels
- 22 Space Technology

## Field and Group Structure

### 01     Aeronautics

- A. Aerodynamics
- B. Aeronautics
- C. Aircraft
- D. Aircraft flight control and instrumentation
- E. Air facilities

### 02     Agriculture

- A. Agricultural chemistry
- B. Agricultural economics
- C. Agricultural engineering
- D. Agronomy and horticulture
- E. Animal husbandry
- F. Forestry

### 03     Astronomy and Astrophysics

- A. Astronomy
- B. Astrophysics
- C. Celestial mechanics

### 04     Atmospheric Sciences

- A. Atmospheric physics
- B. Meteorology

### 05     Behavioral and Social Sciences

- A. Administration and management
- B. Documentation and information technology
- C. Economics
- D. History, law and political science
- E. Human factors engineering
- F. Humanities
- G. Linguistics
- H. Man-machine relations
- I. Personnel selection, training and evaluation
- J. Psychology (Individual and group behavior)
- K. Sociology

### 06     Biological and Medical Sciences

- A. Biochemistry
- B. Bioengineering
- C. Biology



- D. Bionics
- E. Clinical medicine
- F. Environmental biology
- G. Escape, rescue and survival
- H. Food
- I. Hygiene and sanitation
- J. Industrial (occupational) medicine
- K. Life support
- L. Medical and hospital equipment
- M. Microbiology
- N. Personnel selection and maintenance (medical)
- O. Pharmacology
- P. Physiology
- Q. Protective equipment
- R. Radiobiology
- S. Stress physiology
- T. Toxicology
- U. Weapon effects

07      Chemistry

- A. Chemical engineering
- B. Inorganic chemistry
- C. Organic chemistry
- D. Physical chemistry
- E. Radio and radiation chemistry

08      Earth Sciences and Oceanography

- A. Biological oceanography
- B. Cartography
- C. Dynamic oceanography
- D. Geochemistry
- E. Geodesy
- F. Geography
- G. Geology and mineralogy
- H. Hydrology and limnology
- I. Mining engineering
- J. Physical oceanography
- K. Seismology
- L. Snow, ice and permafrost
- M. Soil mechanics
- N. Terrestrial magnetism

09      Electronics and Electrical Engineering

- A. Components
- B. Computers
- C. Electronic and electrical engineering
- D. Information theory
- E. Subsystems
- F. Telemetry

10      Energy Conversion (Non-propulsive)

- A. Conversion techniques
- B. Power sources
- C. Energy storage

11      Materials

- A. Adhesives and seals
- B. Ceramics, refractories and glasses
- C. Coatings, colorants and finishes
- D. Composite materials
- E. Fibers and textiles
- F. Metallurgy and metallography
- G. Miscellaneous materials
- H. Oils, lubricants, and hydraulic fluids
- I. Plastics
- J. Rubbers
- K. Solvents, cleaners and abrasives
- L. Wood and paper products

12      Mathematical Sciences

- A. Mathematics and statistics
- B. Operations research

13      Mechanical, Industrial, Civil, and Marine Engineering

- A. Air conditioning, heating, lighting and ventilating
- B. Civil engineering
- C. Construction equipment, materials and supplies
- D. Containers and packaging
- E. Couplings, fittings, fasteners and joints
- F. Ground transportation equipment
- G. Hydraulic and pneumatic equipment
- H. Industrial processes
- I. Machinery and tools
- J. Marine engineering
- K. Pumps, filters, pipes, fittings, tubing and valves
- L. Safety engineering
- M. Structural engineering

14 Methods and Equipment

- A. Cost effectiveness
- B. Laboratories, test facilities, and test equipment
- C. Recording devices
- D. Reliability
- E. Reprography

15 Military Sciences

- A. Antisubmarine warfare
- B. Chemical, biological, and radiological warfare
- C. Defense
- D. Intelligence
- E. Logistics
- F. Nuclear warfare
- G. Operations, strategy, and tactics

16 Missile Technology

- A. Missile launching and ground support
- B. Missile trajectories
- C. Missile warheads and fuses
- D. Missiles

17 Navigation, Communications, Detection and Countermeasures

- A. Acoustic detection
- B. Communications
- C. Direction finding
- D. Electromagnetic and acoustic countermeasures
- E. Infrared and ultraviolet detection
- F. Magnetic detection
- G. Navigation and guidance
- H. Optical detection
- I. Radar detection
- J. Seismic detection

18 Nuclear Science and Technology

- A. Fusion devices (Thermonuclear)
- B. Isotopes
- C. Nuclear explosions
- D. Nuclear instrumentation
- E. Nuclear power plants
- F. Radiation shielding and protection
- G. Radioactive wastes and fission products
- H. Radioactivity

- I. Reactor engineering and operation
- J. Reactor materials
- K. Reactor physics
- L. Reactors (Power)
- M. Reactors (Non-power)
- N. SNAP technology

19      Ordnance

- A. Ammunition, explosives, and pyrotechnics
- B. Bombs
- C. Combat vehicles
- D. Explosions, ballistics, and armor
- E. Fire control and bombing systems
- F. Guns
- G. Rockets
- H. Underwater ordnance

20      Physics

- A. Acoustics
- B. Crystallography
- C. Electricity and magnetism
- D. Fluid mechanics
- E. Masers and lasers
- F. Optics
- G. Particle accelerators
- H. Particle physics
- I. Plasma physics
- J. Quantum theory
- K. Solid mechanics
- L. Solid-state physics
- M. Thermodynamics
- N. Wave propagation

21      Propulsion and Fuels

- A. Air-breathing engines
- B. Combustion and ignition
- C. Electric propulsion
- D. Fuels
- E. Jet and gas turbine engines
- F. Nuclear propulsion
- G. Reciprocating engines
- H. Rocket motors and engines
- I. Rocket propellants

22      Space Technology

- A. Astronautics
- B. Spacecraft
- C. Spacecraft trajectories and reentry
- D. Spacecraft launch vehicles and ground support

## 01 AERONAUTICS

Theory, design, tests, production, operation, and maintenance of all types of aircraft, aircraft components, and supporting facilities. For similar studies of missiles or spacecraft, see Missile Technology (Field 16) or Space Technology (Field 22).

### GROUP

### SCOPE

- A. Aerodynamics      Theoretical and experimental studies of the motions of gases and of forces acting on bodies in motion relative to gases. Subsonics, transonics, supersonics, hypersonics, thermoaerodynamics, shock waves, Reynolds number effects, Mach number effects, boundary layer phenomena, etc. For applications, see Aircraft (1/C), Explosions, ballistics, and armor (19/D), Missiles (16/D), and Spacecraft (22/B). See also Plasma physics (20/I).
- B. Aeronautics      Aircraft operation and flight studies, including all-weather and night flight, in-flight refueling, taxiing, takeoffs, landings, air traffic, flight safety, ground safety, and aircraft accidents. Aircraft damage assessment and vulnerability studies; effects of gunfire and blast on aircraft and flight equipment.
- C. Aircraft      Design, production, and maintenance of aircraft, aircraft components and equipment, including gliders, lighter-than-air craft, rotating wing and waterborne aircraft, ground effect machines, flexible-wing, VTOL and STOL planes. Structural studies of complete aircraft parts such as bodies, wings, control surfaces, landing gear, and airframes.
- D. Aircraft flight control and instrumentation      Stability and control systems, boundary layer control systems, dynamic and static control devices, flight instruments, etc. For navigation instruments, see Navigation and guidance (17/G).
- E. Air facilities      Airports, runways, hangars, control towers, refueling systems, aircraft handling and maintenance equipment. For air traffic control systems, see Navigation and guidance (17/G).

## 02 AGRICULTURE

GROUP	SCOPE
A. Agricultural chemistry	Utilization of agricultural products by chemical processing; chemical aspects of feeds, fertilizers, etc. Chemurgy.
B. Agricultural economics	Economic conditions, markets, production controls, subsidies, etc. affecting agriculture.
C. Agricultural engineering	Design of farm machinery and farm structures. Soil conservation, water conservation, and irrigation. Processing of farm products.
D. Agronomy and horticulture	Field crop production, cultivation of orchards, gardens, nurseries, etc. For plant anatomy, biochemistry, pathology, etc., <u>see</u> Biology (6/C).
E. Animal husbandry	Production and care of domestic animals, such as bovines, sheep, goats, horses, and swine; domestic animals used as pets. Includes veterinary medicine. For animal anatomy, physiology, pathology, etc., <u>see</u> Biology (6/C). For care and breeding of laboratory animals, <u>see</u> Biology (6/C).
F. Forestry	Development, management, and cultivation of forests.

### 03 ASTRONOMY AND ASTROPHYSICS

GROUP	SCOPE
A. Astronomy	Observations of celestial bodies, their distances, positions, etc. Astronomical instruments.
B. Astrophysics	Physical and chemical aspects of celestial bodies, their origin and evolution. Includes astronomical spectroscopy, stellar spectra, planetary spectra, etc.
C. Celestial mechanics	The motions of celestial bodies under the influence of gravity.



#### 04. ATMOSPHERIC SCIENCES

GROUP	SCOPE
A. Atmospheric physics	Physical and chemical properties of the atmosphere, exclusive of considerations of weather and climate. Aeronomy, aurora and airglow, atmospheric structure, energetic particles, solar terrestrial relationships, etc.
B. Meteorology	Weather observation, prediction, and modification; climatology. Cloud physics, air mass analysis, meteorological instruments, etc.

## 05 BEHAVIORAL AND SOCIAL SCIENCES

### GROUP

### SCOPE

- |   |  |
|---|--|
| A. Administration and management            | Accounting, planning, budgeting, operations, public relations, production planning, organization coordination, etc. <u>See also</u> Cost effectiveness (14/A) and Operations research (12/B).  |
| B. Documentation and information technology | Library science. Acquisition, distribution, dissemination of recorded information, including printed matter, microforms, magnetic tapes and records. Cataloging, indexing, abstracting. Information storage and retrieval. Terminology, dictionaries, thesauri. <u>See also</u> Linguistics (5/G).                         |
| C. Economics                                | Econometrics, economic history, economic theory, banking and finance, international economic relations, trade and commerce. <u>See also</u> Agricultural economics (2/B).  |
| D. History, law and political science       | Theory and practice of government, international relations, politics, law, etc.  |
| E. Human factors engineering                | Design of tools, instruments, equipment, and machinery with emphasis on optimum utilization by humans. Habitability of work and living space, noise control, temperature and humidity control, etc.  |
| F. Humanities                               | Philosophy, literature, art, music, drama, religion, and other branches of learning having primarily a cultural character.   |
| G. Linguistics                              | Study of languages, including phonology, morphology, syntax, and semantics. Mathematical linguistics. Machine translation.   |
| H. Man-machine relations                    | Interaction of man and equipment in terms of subsystem and system performance requirements and evaluation. Encompasses manual controls, information displays, information processing, tactical kinethesis and other human sensory modalities involved in operation of equipment and understanding of personnel subsystems. |

05 BEHAVIORAL AND SOCIAL SCIENCES (Cont)

GROUP	SCOPE
I. Personnel selection, training, and evaluation	Recruitment, selection, training, and utilization of personnel. Industrial relations, wages, benefits. Education, teaching aids, teaching methods. Job analysis, career guidance. For physical examinations, <u>see</u> Personnel selection and maintenance (Medical) (6/N).
J. Psychology (Individual and group behavior)	Mental processes and phenomena (perception, learning, behavior, motivation, intelligence and creativity, attitudes, personality adjustment, group dynamics, etc.) Experimental psychology, including animal learning and behavior; physiological psychology, developmental psychology (infancy through aging); social psychology, clinical psychology, educational psychology, industrial and military psychology, and parapsychology. For psychiatry, <u>see</u> Clinical medicine (6/E). For psychopharmacology, <u>see</u> Pharmacology (6/O).
K. Sociology	Social relations, the functioning of human society, ethnology, criminology, etc.

## 06 BIOLOGICAL AND MEDICAL SCIENCES

GROUP	SCOPE
A. Biochemistry	Reactions and properties of chemical substances occurring in organisms (e.g., enzymes, hormones, lipids, vitamins). Includes alkaloids, steroids, carbohydrates, amino acids, peptides and proteins. Studies of the chemical processes which take place in biological systems. Identification, characterization, and measurement of biochemical substances and the methods used for biochemical assay and analysis. For biochemical studies of drugs, <u>see</u> Pharmacology. <u>See also</u> Organic chemistry (7/C).
B. Bioengineering	Establishment of requirements for, and development of, bio-instrumentation and equipment needed by man in operation of man-machine systems. Includes instrumentation for psychophysiological monitoring, biomedical information handling. Compact, lightweight transducers and transmitter equipment introducing minimum constraint of subject. Man's requirements for displays and controls. Use of body potentials as intrinsic power supplies.
C. Biology	General studies in biology not encompassed by another group, e.g. botany, entomology, zoology. Animal anatomy, physiology and pathology; care and breeding of laboratory animals.
D. Bionics	Study of biological processes in order to develop engineering systems. Cybernetics.
E. Clinical medicine	General medicine, medical specialties, and paramedical sciences. Internal medicine, including preventive medicine; pediatrics and geriatrics, dermatology, ophthalmology, and psychiatry. Dentistry. Immunology, pathology, etc. Includes nursing, first aid, medical technology, physical therapy, and prosthesis. For pharmaceuticals, <u>see</u> Pharmacology (6/O). For veterinary medicine, <u>see</u> Animal husbandry (2/E). For aerospace medicine, <u>see</u> Stress physiology (6/S).

06 BIOLOGICAL AND MEDICAL SCIENCES (Cont)

GROUP	SCOPE
F. Environmental biology	External influences on the biological processes of organisms; ecology, pesticides, insect vectors, pest control, natural noxious agents, etc. <u>See also</u> Stress physiology (6/S).
G. Escape, rescue, and survival	Methods and equipment for escape from disabled aircraft, submarines, etc. Rescue equipment, signals, flotation devices; survival kits.
H. Food	Preparation and processing, packaging, storage and dispensing of food. Kitchen equipment.
I. Hygiene and sanitation	Personal hygiene. For sanitary engineering, <u>see</u> Civil engineering (13/B).
J. Industrial (occupational) medicine	Interaction of man and industrial environment. Safety and preventive medicine, toxic exposure, noise, physical trauma, etc.
K. Life support	Sustainment of life in foreign environments. Closed ecological systems; respiratory support; temperature, humidity, and pressure controls.
L. Medical and hospital equipment and supplies	Equipment and supplies for laboratory and field use. <u>See also</u> Bioengineering (6/B).
M. Microbiology	Studies of bacteria, rickettsiae, and viruses. For further studies of the effects of microorganisms, <u>see</u> Chemical, Biological, and Radiological Warfare (15/B).
N. Personnel selection and maintenance (Medical)	Physical standards, examinations, anthropometrics, physical fitness. <u>See also</u> Personnel selection, training, and evaluation (5/I).
O. Pharmacology	The synthesis, composition, properties, and physiological effects of drugs. Includes psychopharmacology. <u>See also</u> Weapon effects (6/U).

06 BIOLOGICAL AND MEDICAL SCIENCES (Cont)

GROUP	SCOPE
Physiology	Organic processes and phenomena of humans, e.g., growth, aging, metabolism, biological rhythm, healing and repair, sensation, etc. <u>See also</u> Stress physiology (6/S). For physiological psychology, <u>see</u> Psychology (5/J).
Protective equipment	Protective clothing; goggles, ear protectors, masks, etc. For armor, <u>see</u> Explosions, ballistics, and armor (19/D). <u>See also</u> Chemical, biological, and radiological warfare (15/B) and Radiation shielding and protection (18/F).
Radiobiology	Radiation biology. Interaction of biological systems with electromagnetic and particle radiation. Dosimetry, health physics, radiation injury. Prophylaxis and therapy of nuclear radiation sickness and injury.
Stress physiology	Effects of extreme environments or unusual stimulation on biological processes. Physiological effects of motion, gravity, sound, light, heat, magnetism, sensory deprivation, fatigue, etc. Includes aerospace medicine. For effects of ionizing and particle radiation, <u>see</u> Radiobiology (6/R).
Toxicology	Poisons and contaminants: detection, neutralization, and decontamination; physiological effects.
Weapon effects	Wounds, injuries, diseases or other conditions directly resulting from weapons. Excludes effects of Chemical, biological, and radiological warfare (15/B) and Nuclear warfare (15/F). For bombing effects, <u>see</u> Explosions, ballistics and armor (19/D).

## O7 CHEMISTRY

GROUP	SCOPE
A. Chemical engineering	Plant equipment, apparatus, techniques, unit operations and processes that apply to chemical manufacturing, processing, transportation, and storage. Desalination.
B. Inorganic chemistry	Reactions and properties of all the elements and their compounds, with the exception of carbon-hydrogen compounds. Inorganic synthesis. Inorganic qualitative and quantitative analysis, including analysis of inorganic chemicals by physical methods (instrumental analysis); identification and characterization of elements and inorganic compounds by means of their spectra. Includes inorganic polymers, coordination compounds, metal chelates, metal carbonyls, and metal ion complexes such as amines. For organometallic compounds <u>see</u> Organic chemistry (7/C).
C. Organic chemistry	Synthesis, reactions, and properties of organic compounds. Hydrocarbons, alcohols, aldehydes and ketones, carboxylic acids, amines, etc. Chemistry of dyes. Heterocyclic compounds, organometallic compounds, organometalloidal compounds, semiorganic compounds, terpenes. Synthesis of polymers, excluding high polymers such as Rubbers (11/J) and Plastics (11/I). Organic qualitative and quantitative analysis, including the analysis of organic compounds by physical methods; characterization and determination of organic compounds by means of their spectra. <u>See also</u> Biochemistry (6/A)
D. Physical chemistry	Physical aspects and theoretical interpretations of chemical systems. Colloid chemistry, catalysis, solutions, chemical equilibria and reaction kinetics, surface chemistry, electrochemistry, chemical thermodynamics and thermochemistry, statistical mechanics, etc. Includes physical methods of analysis not applied exclusively to specific Groups of chemical substances. General treatments of chromatography,

07 CHEMISTRY (Cont)

GROUP

SCOPE

electrophoresis, polarography, photometry, potentiometry. Includes atomic and molecular structure and spectra. X-ray, ultraviolet, visible, infrared, and microwave spectra; vibronic spectra, and Raman spectra for the fundamental understanding of chemical binding, nuclear motions, etc; vibrational frequencies, rotational frequencies, force constants, pressure broadening, solvent shifts, etc. Includes nuclear magnetic resonance spectroscopy and electron paramagnetic resonance spectroscopy. Excludes the qualitative and quantitative analysis of chemical substances by means of their spectra, for which see Inorganic chemistry (7/B) or Organic chemistry (7/C). See also Optics (20/F) and Thermodynamics (20/M).

Radio and radiation  
chemistry

Chemistry of the effects of high-energy radiation on matter. Chemical effects of emanations from radioactivity and fission (helium nuclei, electrons, gamma rays, and neutrons). Chemistry of radioactive substances. Tracer studies. Includes photochemistry (i.e. study of interrelationships between light and chemical reactions, especially visible and ultraviolet light). Photosynthesis, photodecomposition and photolysis, photopolymerization, etc.



## 08 EARTH SCIENCES AND OCEANOGRAPHY

GROUP	SCOPE
A. Biological oceanography	Marine and animal life as it relates to its environment.
B. Cartography	Map making, photogrammetry, terrain models, etc.
C. Dynamic oceanography	Ocean waves, currents, tides, ocean air interactions, etc.
D. Geochemistry	Chemical properties of the earth's crust.
E. Geodesy	Geodetic surveying; determination of position of points on the earth's surface; shape and size of the earth; variations of terrestrial gravity and magnetism.
F. Geography	Description of the physical features of the earth, the distribution of plants and animals. Includes political, economic, and commercial geography.
G. Geology and mineralogy	Structures, properties, and classification of rocks, rock formations, and rock constituents. Mineralogy, paleontology, stratigraphy.
H. Hydrology and limnology	Properties, distribution, and circulation of water, including its surface, underground, and atmospheric occurrence. Physical, chemical and biological conditions in fresh water bodies. For water purification, <u>see</u> Civil engineering (13/B). <u>See also</u> Meteorology (4/B).
I. Mining engineering	Location and evaluation of mineral deposits; layout and equipment of mines, mining operations.
J. Physical oceanography	Physical and chemical properties of ocean water. Topography and composition of the ocean bottom.
K. Seismology	Detection, measurement, and recording of earth movements. <u>See also</u> Seismic detection (17/J).
L. Snow, ice, and permafrost	Physical characteristics of snow, ice, and permanently frozen soil. Trafficability, stability, mechanical properties, etc.

08 EARTH SCIENCES AND OCEANOGRAPHY (Cont)

GROUP	SCOPE
Soil mechanics	Physical properties of soils. <u>See also</u> Snow, ice, and permafrost (8/L).
Terrestrial magnetism	Geomagnetic field theory, magnetic moments of the earth, gravitational field theory, gravity anomalies, etc.

## 09. ELECTRONICS AND ELECTRICAL ENGINEERING

GROUP	SCOPE
A. Components	Design and development of basic electrical and electronic components such as electron tubes and semiconductor devices (diodes, transistors, thermistors, varistors, thin-film devices, etc.) Switches, circuits, connectors, etc.
B. Computers	Design, development, and application of electronic computers and peripheral equipment. Includes analog, digital, analog-digital, special purpose and general purpose computers; computer accessories, supplies, and installation; computer software such as programs, programming languages, program generators, compilers, executive routines, and system evaluation and documentation.
C. Electronic and electrical engineering	Design and operation of electric machinery. Electronic systems, exclusive of those encompassed by Field 17. Includes electrical and electronic test equipment. <u>See also</u> Nuclear power plants (18/E) and Energy conversion (Field 10).
D. Information theory	Representation, uncertainty, noise, information content, information entropy, coding theory.
E. Subsystems	Design and development of electrical and electronic devices that are usually aggregates of components, but do not in themselves constitute complete systems. Includes synchros, servomechanisms, etc.
F. Telemetry	Telemetry equipment, including antennas, receivers, transmitters, etc.

## 10 ENERGY CONVERSION (Non-Propulsive)

GROUP	SCOPE
A. Conversion techniques	Methods and devices capable of being used in the conversion of energy from one form to another. Turbo-machinery, photovoltaic devices, thermoelectric generators, thermionic converters, fuel cells, etc.
B. Power sources	Energy source and conversion device capable of supplying controlled power in some useful form. Radioisotope thermoelectric generator, solar concentrator with thermionic generator, nuclear reactor with thermoelectric converter.
C. Energy storage	The storage of energy for later recovery in a useful manner. Electrochemical devices such as batteries, thermal energy in the heat of fusion, mechanical energy of compressed springs, electrical energy in capacitors, etc.

## 11 MATERIALS

GROUP	SCOPE
A. Adhesives and seals	Adhesives, glues, binders, etc., for all types of materials. Sealants, seals, and gaskets for all purposes. For propellant binders, <u>see</u> Rocket propellants (21/I).
B. Ceramics, refractories, and glasses	Ceramic materials, including glasses, brick, porcelain, tiles, etc. Nonmetallic refractory materials. Cermets. For heat-resistant metals and alloys, <u>see</u> Metallurgy and metallography (11/F).
C. Coatings, colorants, and finishes	Paints, paint primers, varnishes, plastic and rubber coatings. Uses of dyes and pigments. For chemistry of dyes, <u>see</u> Organic chemistry (7/C). For metal coatings, <u>see</u> Metallurgy and Metallography (11/F).
D. Composite materials	Materials composed of two or more physically distinct constituents. For reinforced plastics, <u>see</u> Plastics (11/I).
E. Fibers and textiles	Natural and synthetic fibers, threads, yarns, and textiles.
F. Metallurgy and metallography	Refining and production of metals and alloys. Microstructure, physical and mechanical properties, corrosion studies, etc. Metal coatings. Heat-resistant metals and alloys (the refractory metals or alloys designed for use above 1000°C). Includes extractive and physical metallurgy. For fabrication metallurgy (metal forming), <u>see</u> Industrial processes (13/H).
G. Miscellaneous materials	Materials not included in another group, including leather, fur, and other animal products. Refrigerants, straw, waxes, etc.
H. Oils, lubricants, and hydraulic fluids	Properties, performance, and production of all types of oils, lubricants, and hydraulic fluids.

## 11 MATERIALS (Cont)

### GROUP

### SCOPE

- |                                      |  |
|--------------------------------------|--|
| I. Plastics                          | Properties, performance, and production of all types of plastics and resins; reinforced plastics and laminates. For plastic coatings, see Coatings, colorants and finishes (11/C). For synthetic fibers and textiles, <u>see</u> Fibers and textiles (11/E). |
| J. Rubbers                           | Production, performance, and properties of natural and synthetic rubber and rubber products. Elastomers.   |
| K. Solvents, cleaners, and abrasives | Cleaning compositions, solvents, detergents, soaps, abrasives, etc.  |
| L. Wood and paper products           | Wood, wood products, paper, cardboard, converted products, etc.  |

12 MATHEMATICAL SCIENCES

GROUP	SCOPE
A. Mathematics and statistics	Mathematics and statistics research. For applied mathematics, <u>see</u> the specific application. For mathematical linguistics, <u>see</u> Linguistics (5/G).
B. Operations research	Theoretical operations research. For applied techniques, <u>see</u> the specific application.

### 13 MECHANICAL, INDUSTRIAL, CIVIL, AND MARINE ENGINEERING

GROUP	SCOPE
A. Air conditioning, heating, lighting, and ventilating	Heating systems, heat pumps, boilers, furnaces, radiators, convectors. Exhaust systems, fans, ventilators and ventilation, heat removal. Air conditioning systems, refrigeration systems, cold storage systems, lighting systems.
B. Civil engineering	Sources of water supply, water collection, well drilling, water distribution, and flood control. Urban planning and renewal, highway planning, public utilities, etc. Sanitation, waste disposal, water treatment and purification, sewage treatment and disposal, air and water pollution control. Sanitary engineering. For distribution and circulation of water, especially natural water, at the surface of the earth, <u>see</u> Hydrology and limnology (8/H). <u>See also</u> Structural engineering (13/M).
C. Construction equipment, materials, and supplies	Excavation and earth moving equipment, hoisting and conveying equipment, construction equipment. Building materials and supplies.
D. Containers and packaging	Design, production, performance, and testing of containers and packaging methods. Storage tanks and accessories.
E. Couplings, fittings, fasteners, and joints	Design, performance, and testing of bolts, screws, studs, rivets, hooks, couplings, fittings. Bonded, soldered, and welded joints, etc. For electrical fittings and connectors, <u>see</u> Electronic and electrical engineering (9/C).
F. Ground transportation equipment	Design, operation, performance, and maintenance of amphibious vehicles, cargo vehicles, passenger vehicles, railroad equipment, automotive parts and equipment. For armored vehicles designed specifically for combat, <u>see</u> Combat vehicles (19/C).
G. Hydraulic and pneumatic equipment	Design, production, performance, and testing of hydraulic and pneumatic systems. Accumulators, distribution equipment, actuators and motors, controls and components.



13 MECHANICAL, INDUSTRIAL, CIVIL, AND MARINE ENGINEERING (Cont)

GROUP	SCOPE
H. Industrial processes	Production control, quality control, plant design, inspection. Fabrication, cleaning and finishing, etc. of industrial materials. Includes fabrication metallurgy (metal forming): casting, forging, drawing, electroforming, extrusion, machining, rolling, stamping, spinning, welding; powder and fiber metallurgy. Cast and fused metals, foils, wire, wire cloth, etc. For Food processing, <u>see</u> Food (6/H).
I. Machinery and tools	Machines and machine elements, including bearings, clutches, drives, gears, cams, springs, etc. Metal-working tools, woodworking tools, dies, jigs, etc. For electrical machinery, <u>see</u> Electronic and electrical engineering (9/C).
J. Marine engineering	Design, construction, maintenance, salvage, operation, and performance of all types of ships, boats, and marine equipment.
K. Pumps, filters, pipes, tubing, fittings, and valves	Design, construction, operation, and performance of all types of pumps, filters, pipes, tubes, and valves.
L. Safety engineering	Fire-fighting equipment, fire-detection equipment, accident prevention, safety devices. For protective clothing, etc., <u>see</u> Protective equipment (6/Q).
M. Structural engineering	Design and construction of structures. Dams, bridges, buildings, etc. Foundations, reinforcements, etc. <u>See also</u> Civil Engineering (13/B) and Construction equipment, materials, and supplies (13/C).

#### 14. METHODS AND EQUIPMENT

GROUP	SCOPE
Cost effectiveness	Examination and selection of equipment, materials, personnel, etc. for optimum performance of given tasks. Cost-benefit analysis, trade-off factors, etc. <u>See also</u> Operations research (12/B) and Administration and management (5/A).
Laboratories, test facilities, and test equipment	Laboratory and test facility design; layout, construction, operation, maintenance, etc. Laboratory and testing devices, wind and water tunnels, simulation devices and facilities. Instrumentation. For electrical and electronic test equipment, <u>see</u> Electronic and electrical engineering (9/C). For optical equipment, <u>see</u> Optics (20/F).
Recording devices	Recording equipment, including wire and tape recorders, playback equipment, etc.
Reliability	Determination of the probability of satisfactory performance of components and equipment. Prevention and correction of malfunctions.
Reprography	Photographic techniques and equipment. Cameras, lenses, shutters, projectors, photographic processes, photographic materials, etc. Electrostatic reproduction, facsimile replication, photochromic replication, photoconductive replication, thermography, thermoplastic recording. Printing, lithography, and related equipment. For photogrammetry, <u>see</u> Geodesy (8/E).

## 15 MILITARY SCIENCES

GROUP	SCOPE
A. Antisubmarine warfare	Operations conducted against submarines, their supporting forces and operating bases. <u>See also</u> Navigation, Communications, Detection, and Countermeasures (Field 17).
B. Chemical, biological, and radiological warfare	Design, development, and utilization of chemical, biological, and radiological weapons. Description, production, generation, and stability of lethal and irritant agents. Nerve gases, psychochemical agents, choking gases, blistering gases, vomiting and tear gases, etc. Biological agents (toxic biological products, anticrop agents, plant growth regulators, etc.) Detection of chemical and biological agents; decontamination. Special shelters. Protective clothing and equipment. For guided missile warheads, <u>see</u> Missile warheads and fuzes (16/C).
C. Defense	Military and civil defense. Active and passive defense systems, camouflage. Anti-aircraft defense systems, antimissile defense systems, antisatellite defense systems, early warning systems. Development and use of antiaircraft weapons.
D. Intelligence	Methods of collecting, evaluating, interpreting, and disseminating information concerning areas of operations of foreign nations.
E. Logistics	Industrial mobilization. Procurement, storage, distribution, issue, repair, and reclamation of equipment and supplies. Design and testing of personal equipment, ordinary combat clothing, packs, sleeping bags, boots, etc. Transport of troops, cargo maintenance, etc.
F. Nuclear warfare	Development and utilization of nuclear weapons. Design of nuclear devices. Studies of the physical and physiological effects of nuclear weapons. For guided missile warheads, <u>see</u> Missile warheads and fuzes (16/C).

15 MILITARY SCIENCES (Cont)

GROUP

SCOPE

. Operations, strategy,  
and tactics

Joint and combined operations. Campaigns, battles, invasions, theater operations, etc. Planning, analysis and appraisal. Methods of attack and support. See also Chemical, biological, and radiological warfare (15/B), Nuclear warfare (15/F), and Antisubmarine warfare (15/A).

## 16 MISSILE TECHNOLOGY

Theory, design, tests, production, operation, and maintenance of all types of guided missiles, missile components, and related equipment. For similar studies of spacecraft launch vehicles, see Space Technology (Field 22). For unguided rocket-propelled weapons, see Rockets (19/G).

GROUP	SCOPE
A. Missile launching and ground support	Missile handling and launching, including transportation, storage, preparation for launching, launching from aircraft, surface launching, and underwater launching. Launching equipment, checkout equipment, ground support equipment and systems.
B. Missile trajectories	Determination, analysis, and processing of missile trajectory data. Flight path analysis, impact prediction, etc. Reentry.
C. Missile warheads and fuzes	Design, performance, and operation of all warhead types including explosive, chemical, biological, and nuclear. Equipment installed in warheads for specialized research. Missile fuzes of all types.
D. Missiles	All phases of missile theory, design, construction, and performance. Aerodynamic studies, structural analysis, etc.

## 17 NAVIGATION, COMMUNICATIONS, DETECTION, AND COUNTERMEASURES

GROUP	SCOPE
Acoustic detection	Sonar, sound ranging, sound location equipment, etc.
Communications	Design, performance, operation and maintenance of telephone, telegraph, teletype, television, and radio communication systems. <u>See also</u> Electronic and electrical engineering (9/C).
Direction finding	Determination of the direction of arrival of signals.
Electromagnetic and acoustic countermeasures	Jamming and antijamming, interception, and deception, of acoustic and electromagnetic signals. Receivers, transmitters, decoys, etc. used in countermeasures.
Infrared and ultraviolet detection	Detection and tracking by measurement of the infrared or ultraviolet radiation from a target. Does not include the laboratory identification and characterization of specific chemical elements and compounds. <u>See</u> Inorganic chemistry (7/B) or Organic chemistry (7/C). For design and development of photodetectors of all types, <u>see</u> Optics (20/F).
Magnetic detection	Detection by measurement of the magnetic field of a target.
Navigation and guidance	Electronic, celestial, and inertial navigation and guidance systems and related equipment; homing devices. Includes Loran, Shoran, instrument landing systems, air traffic control systems, controlled approach systems, and navigational aids such as astrographs, chronometers, compasses, driftmeters, sextants, octants, air position indicators, graphic instruments, maps and charts.
Optical detection	Flash locating equipment, theodolites, periscopes, binoculars, telescopes, etc.

17 NAVIGATION, COMMUNICATIONS, DETECTION, AND COUNTERMEASURES (Cont)

GROUP	SCOPE
I. Radar detection	Detection and tracking by means of beamed and reflected radiofrequency signals.
J. Seismic detection	Detection of objects by measurement of seismic waves.

## 18 NUCLEAR SCIENCE AND TECHNOLOGY

GROUP	SCOPE
Fusion devices (Thermonuclear)	Theory, design, construction, or operation of specific devices (stellarators, pinch devices, magnetic mirror machines, etc.) used for research on controlled thermonuclear fusion reactions. For related plasma physics studies, <u>see</u> Plasma physics (20/I).
Isotopes	Separation or concentration of isotopes by any means. Industrial and medical applications. For isotopic SNAP applications, <u>see</u> SNAP technology.
Nuclear explosions	Testing of nuclear devices including peaceful applications, e.g., Plowshare. <u>See also</u> Nuclear warfare (15/F).
Nuclear instrumentation	Radiation detection devices and associated equipment; also instruments associated with the control, safety, or operation of nuclear reactors or particle accelerators.
Nuclear power plants	Integrated assemblage, including reactor and turbogenerator equipment, plus control and regulatory devices; safety studies. Includes mobile as well as stationary power plants.
Radiation shielding and protection	Shielding design, isodose plots, materials transmission and absorption studies, safety devices, decontamination, etc.
Radioactive wastes and fission products	Separation, processing, handling, storage, or disposal; fission product utilization. <u>See also</u> Isotopes (18/B).
Radioactivity	Radioactive decay, natural and induced radioactivity, interaction of charged particles and radiation with matter, radioactive fallout, fission, criticality studies, etc. <u>See also</u> Particle physics (20/H) and Radio and radiation chemistry (7/E)
Reactor engineering and operation	Engineering of any type (construction, thermodynamic, hydrodynamic, nuclear, etc.) related directly to the design or operation of a specific reactor or reactor type.



18 NUCLEAR SCIENCE AND TECHNOLOGY (Cont)

GROUP	SCOPE
J. Reactor materials	Production, testing (either under reactor or simulated reactor conditions) or reclamation of fuel materials, coolants, moderators, control materials, structural materials and shielding materials. Includes fabricated elements or assemblies and specific configurations (plates, rods, spheres, cylinders, etc.)
K. Reactor physics	Reactor kinetics, reactor theory, criticality and neutron thermalization, scattering, slowing down, economy, etc. Includes the use of reactor simulators or computers.
L. Reactors (Power)	Design, construction, operation, etc., of reactors used as energy sources for electric power generation or for propulsion. <u>See also</u> Nuclear power plants (18/E).
M. Reactors (Non-power)	Reactors designed and built for purposes other than for electric power or propulsion. Includes production research and training, test, and process heat types. <u>See also</u> Nuclear propulsion (21/F).
N. SNAP technology	Systems for Nuclear Auxiliary Power, both isotopic and reactor. Design, construction, operation, safety, etc.

## 19 ORDNANCE

GROUP	SCOPE
A. Ammunition, explosives	Projectiles, fuzes, demolition explosives, detonators, grenades, land mines, high explosives, primers, powder propellants, ammunition shaped charges, flame throwers, ammunition handling equipment, etc. Production, performance, stability in storage, etc., of incendiaries, pyrotechnics, screening agents and smokes, etc.
B. Bombs	High-explosive, fragmentation, antipersonnel, armor piercing, general purpose, chemical bombs, etc. Bomb handling equipment.
C. Combat vehicles	Armored wheeled and track-laying vehicles for both cargo and personnel. Heavy, light and medium tanks. Tank chassis used as gun carriers, their components and accessories.
D. Explosions, ballistics, and armor	Shock waves, detonation, earth movement, penetration, etc. Effects of bombing, blast, heat, gunfire, ballistics, armor plate, body armor, etc. For nuclear explosions, <u>see</u> (18/C). <u>See also</u> Weapon effects (6/U).
E. Fire control and bombing systems	Computers, sights, directors, range finders, gun-laying and bombing radar systems, bomb releases, and other systems or devices used to direct the firing of any weapon.
F. Guns	Small arms, automatic weapons, recoilless weapons, mortars, artillery and naval guns, their components, accessories, and interior ballistics. Gun carriages, gun mounts, remote control equipment, etc.
G. Rockets	Rocket-propelled weapons, including aircraft, large caliber and shoulder-fired rockets and devices for launching.
H. Underwater ordnance	Torpedoes, submarine mines, depth charges hydrobombs, etc., and devices for launching.

## 20 PHYSICS

GROUP	SCOPE
A. Acoustics	Sound transmission and propagation, acoustic waves, ultrasonics, etc. Vibratory systems, pitch, intensity, frequency, damping, resonance, etc.
B. Crystallography	Structure and properties of crystalline forms. Lattices, impurities, etc.
C. Electricity and magnetism	Theory of electrical and magnetic phenomena. Electrostatics, electrodynamics, magnetodynamics, magnetostatics. For nuclear magnetic resonance spectroscopy, <u>see</u> Physical chemistry (7/D).
D. Fluid mechanics	Dynamics and statics of fluids, excluding Aerodynamics (1/A). Includes hydrodynamics and hydrostatics. <u>See also</u> Marine engineering (13/J) and Hydraulic and pneumatic equipment (13/G).
E. Masers and lasers	Microwave and light amplification devices, including irasers, uvasers, etc.
F. Optics	Generation, transmission, reflection, refraction, propagation and properties of electromagnetic radiation in the optical region of the spectrum (10 angstroms to about 1 mm) and extending into the microwave region. Physical and geometric optics, electron and microwave optics, fiber optics. Optical imaging, optical equipment. X-ray diffraction, neutron diffraction, etc. Techniques and design of apparatus for use in mass spectrometry and spectroscopy. Includes photodetectors of all types: bolometers, radiometers, photomultipliers, etc. For radiofrequency spectroscopy, <u>see</u> Wave propagation (20/N). For precise laboratory identification and characterization of specific chemical substances by means of their spectra, <u>see</u> the appropriate Group under Chemistry (Field 7). For spectroscopy applied to atomic and molecular structure, <u>see</u> Physical chemistry (7/D). For the electromagnetic detection of gross substances and objects, <u>see</u> the appropriate Group under Navigation, Communications, Detection, and Countermeasures (Field 17). For astronomical spectroscopy, <u>see</u> Astrophysics (3/B).

## 20 PHYSICS (Cont)

GROUP	SCOPE
G. Particle accelerators	Design and operation of betatrons, bevatrns, cyclotrons, synchrotrons, etc.
H. Particle physics	Properties and reactions of elementary particles, especially subatomic particles (electrons, mesons, hyperons, etc., anti-particles). Nuclear reactions; cosmic rays. For atomic and molecular structure and spectra, <u>see</u> Physical chemistry (7/D).
I. Plasma physics	Theory and properties of plasmas, including magnetohydrodynamics, pinch effect, plasma oscillations, plasma jets, etc. <u>See also</u> Particle physics (20/H). For applications, <u>see</u> the appropriate field.
J. Quantum theory	Relativistic and nonrelativistic quantum theory, relativity theory, quantum mechanics and quantum statistics.
K. Solid-mechanics	Dynamics and statics of solid bodies. Structural mechanics; kinetics, kinematics, equilibria, stress analysis, buckling, elasticity, plasticity, vibrations, shock and impact, etc.
L. Solid-state physics	Studies of the structure and properties of solids, exclusive of those encompassed by Crystallography (20/B) and Metallurgy and metallography (11/F). Properties of solids at cryogenic temperatures; cryosars. Includes fundamental research and theoretical studies of semiconductors. For semiconductor devices, <u>see</u> Masers and lasers (20/E); <u>/Electronic/</u> Components (9/A); and Energy Conversion (Field 10).
M. Thermodynamics	Thermodynamic theory, equations of state, free energy, enthalpy, entropy, thermodynamic cycles. Heat and heat transfer, including methods and apparatus for determining thermal radiation properties of materials (thermal emittance, reflectance, absorptance and transmittance; blackbody radiation). <u>See also</u> relevant Groups of substances, especially under Materials (Field 11). Low-temperature phenomena

20 PHYSICS (Cont)

GROUP

SCOPE

N. Wave propagation

and technology, excluding properties of solids at cryogenic temperatures, for which see Solid-state physics (20/L). Cryogenics, cryostats, cryopumping, etc. See also Physical chemistry (7/D).

Generation, modulation, propagation, and scattering of electromagnetic waves, exclusive of those included in Optics (20/F). Includes radiofrequency spectroscopy.

## 21 PROPULSION AND FUELS

### GROUP

### SCOPE

- 1. Air-breathing engines      Advanced engines which use ingested air to oxidize their fuel, e.g. the liquid air cycle engine (LACE). For conventional reciprocating and jet engines, see respectively, Reciprocating engines (21/G) and Jet and gas turbine engines (21/E).
- 2. Combustion and ignition      Ignition, autoignition, starters, igniters, distributors, spark plugs, flame stability, combustion product studies, etc. See also Thermodynamics (20/M).
- 3. Electric propulsion      All types of engines deriving power from free ions or electrons. Ion, plasma, arc-jet systems, etc.
- 4. Fuels      Production, performance, storage etc., of all types of solid, liquid or gaseous fuels except those used in rockets. See also Chemistry (Field 7).
- 5. Jet and gas turbine engines      All types of jet and gas turbine engines, including hydroduct, turboprop, etc.
- 6. Nuclear propulsion      Nuclear devices for marine, ground, air, and space propulsion.
- 7. Reciprocating engines      Reciprocating engines of various configurations for all types of propulsion. Includes steam engines.
- 8. Rocket motors and engines      Rocket motors and nozzles, rocket motor cases, combustion chambers, and related subsystems. Propulsion hardware (propellant feed systems, tanks, injectors, pressurization systems, etc.)
- 9. Rocket propellants      Production, performance, handling, and storage of chemical propellants and propellant combinations. Includes thermochemistry and chemical reaction kinetics of propellant combinations. Liquid, solid, and hybrid propellants, including rocket fuels, oxidizers, binders, plasticizers, additives, etc. See also Chemistry (Field 7).

## 22 SPACE TECHNOLOGY

Theory, design, tests, production, operation, and maintenance of all types of spacecraft, spacecraft components, and supporting facilities. See also Navigation, Communication, Detection, and Countermeasures (Field 17) and Propulsion and Fuels (Field 21).

GROUP	SCOPE
A. Astronautics	Orbital rendezvous, space stations, space exploration, operations in space, spacecraft operating problems, etc.
B. Spacecraft	Design and construction of spacecraft. Spaceships, space probes, space capsules, satellite vehicles, aerospace planes, and their components, accessories, auxiliary systems, etc.
C. Spacecraft trajectories and reentry	Determination, analysis, processing, etc. of spacecraft trajectory data. Orbital calculations, flight path analysis, reentry data, space mechanics, etc.
D. Spacecraft launch vehicles and ground support	Handling and launching including transportation, storage, preparation for launching, and countdown. Launching equipment, check-out equipment, ground support equipment and systems. Spaceports.

# INDEX TO SCOPE NOTES

- A -

Abrasives, 11K  
 Absorptance; absorptivity  
     (thermal radiation), 20M  
 Absorption spectra, 7B, C, D  
 Abstracting, 5B  
 Accidents  
     aircraft, 1B  
     prevention, 13L  
 Accounting, 5A  
 Acoustic countermeasures, 17D  
 Acoustic detection, 17A  
 Acoustic signals, 17D  
 Acoustics, 20A  
 Actuators, 13G  
 Adhesives, 11A  
 Administration, 5A  
 Aerodynamic configurations, 1A  
 Aerodynamics, 1A  
 AERONAUTICS, 1  
 Aeronomy, 4A  
 Aerospace medicine, 6S  
 Aerothermodynamics, 1A  
 Aging  
     physiology of, 6P  
     psychology of, 5J  
 Agricultural chemistry, 2A  
 Agricultural economics, 2B  
 Agricultural engineering, 2C  
 AGRICULTURE, 2  
 Agronomy, 2D  
 Air-breathing engines, 21A  
 Air conditioning, 13A  
 Air facilities, 1E  
 Air mass analysis, 4B  
 Air pollution, 13B  
 Air-position indicators, 17G  
 Air traffic control systems, 17G  
 Aircraft, 1C  
     flight control & instrumenta-  
         tion, 1D  
     handling & maintenance, 1E  
     structures & components, 1C  
 Airframes, 1C  
 Airglow, 4A  
 Airplanes, 1C  
 Airports, 1E  
 Alcohols, 7C  
 Aldehydes, 7C  
 Alkaloids, 6A  
 Alloys, 11F  
 Amines, 7C  
 Ammines, 7B  
 Amino acids, 6A  
 Ammunition, 19A  
     handling equipment for, 19A  
 Amphibious vehicles, 13F  
 Analog computers, 9B  
 Analytical chemistry  
     biochemical, 6A  
     inorganic, 7B  
     organic, 7C  
 Anatomy, plant and animal, 6C  
 Animal husbandry, 2E  
 Animals  
     domestic, 2E  
     laboratory, 6C  
     learning & behavior, 5J  
 Antennas, 9F  
 Anthropometrics, 6N  
 Antijamming, 17D  
 Antiparticles, 20H  
 Antisubmarine warfare, 15A  
 Applied psychology, 5J  
 Arc-jet systems, 21D  
 Armor, 19D  
 Armored vehicles, 19C  
 Art, 5F  
 Artillery guns, 19F  
 Astrographs, 17G  
 ASTRONOMY & ASTROPHYSICS, 3  
 Astronautics, 22A  
 Astronomical instruments, 3A  
 Astronomical spectroscopy, 3B  
 Astrophysics, 3B  
 Atmosphere, 4A  
 Atmosphere entry, 16B, 22C

- 42 -



Atmospheric physics, 4A  
 ATMOSPHERIC SCIENCES, 4  
 Atomic structure & spectra, 7D  
 Attack, 15G  
 Attitude control  
     aircraft, 1D  
     spacecraft, 22C  
 Attitudes (Psychology), 5J  
 Aurora, 4A  
 Autoignition, 21B  
 Automatic weapons, 19F  
 Automotive parts, 13F

- B -

Bacteria, 6M  
 Ballistics, interior, 19D  
 Banking & finance, 5C  
 Batteries, 10C  
 Battles (Military sciences), 15G  
 Bearings, 13I  
 Behavior, 5J  
 BEHAVIORAL & SOCIAL SCIENCES, 5  
 Binders (Materials), 11A  
 Binoculars, 17H  
 Biochemistry, 6A  
 Bioengineering, 6B  
 Bioinstrumentation, 6B  
 BIOLOGICAL & MEDICAL SCIENCES, 6  
 Biological oceanography, 8A  
 Biological warfare, 15B  
 Biology, 6C  
 Bionics, 6D  
 Blackbody radiation, 20M  
 Blast effects, 19D  
 Boats, 13J  
 Body armor, 19D  
 Boilers, 13A  
 Bolometers, 20F  
 Bolts, 13E  
 Bomb-handling equipment, 19B  
 Bombing effects, 19D  
 Bombing systems, 19E  
 Bombs, 19B

Botany, 6C  
 Boundary layer control equipment,  
     for aircraft, 1D  
 Boundary layer flow, aerodynamic, 1A  
 Bovines, 2E  
 Bridges, 13M  
 Budgeting, 5A  
 Building materials & supplies, 13C  
 Buildings, 13M

- C -

Cameras, 14E  
 Camouflage, 15D  
 Campaigns, military, 15G  
 Cams, 13I  
 Capacitors, 10C  
 Carbohydrates, 6A  
 Carbonyl compounds, organic, 7C  
 Carbonyls (inorganic compounds), 7B  
 Carboxylic acids, 7C  
 Cardboard, 11L  
 Cargo maintenance, 15E  
 Cargo vehicles, 13F  
 Cartography, 8B  
 Casting (Industrial process), 13H  
 Cataloging, library, 5B  
 Catalysis, 7D  
 Cattle, 2E  
 Celestial bodies, 3  
 Celestial mechanics, 3C  
 Ceramics, 11B  
 Cermets, 11B  
 Charts (Navigation), 17F  
 Chelate compounds, 7B  
 Chemical analysis  
     biochemical, 6A  
     inorganic, 7B  
     organic, 7C  
 Chemical binding, 7D  
 Chemical elements, 7B  
 Chemical engineering, 7A  
 Chemical equilibria, 7D  
 Chemical kinetics, 7D  
     of propellants, 21I

- 43 -

- Chemical manufacturing, 7A
- Chemical processes, in biological systems, 6A
- Chemical processing, of agricultural products, 2A
- Chemical propellants, 21I
- Chemical systems, 7D
- Chemical warfare, 15B
- Chemicals, manufacturing, storage, & transport, 7A
- CHEMISTRY, 7
  - agricultural, 2A
  - biological, 6A
- Chemurgy, 2A
- Chromatography, 7D
- Chronometers, 17G
- Circuits, 9A
- City planning, 13B
- Civil defense, 15D
- Civil engineering, 13B
- Cleaning agents, 11K
- Climatology, 4B
- Clinical medicine, 6E
- Clinical psychology, 5J
- Closed ecological systems, 6K
- Cloud physics, 4B
- Clutches, 13I
- Coatings
  - metal, 11F
  - non-metal, 11C
- Cold-storage systems, 13A
- Colloid chemistry, 7D
- Colorants, 11C
- Combat clothing, 15E
- Combat vehicles, 19C
- Combustion, 21B
- Combustion chambers, 21H
- Commerce, 5C
- Communications, 17B
- Complex compounds, metal ion, 7B
- Components, electrical-
  - electronic, 9A
- Composite materials, 11D
- Computer programs & programming, 9B
- Computers, 9B
- Connectors, electrical, 9A
- Construction equipment, 13C

- Containers, 13D
- Control surfaces, aircraft, 1C
- Control systems
  - aircraft, 1D
  - spacecraft, 22C
- Control towers, 1E
- Controlled approach systems, 17G
- Convector, 13A
- Converted products, 11L
- Coordination compounds, 7B
- Corrosion studies, 11F
- Cosmic rays, 20H
- Cost effectiveness, 14A
- Countermeasures, 17
- Couplings, 13E
- Creativity, 5J
- Criminology, 5K
- Criticality studies, 18K
- Cryogenic phenomena & technology, 20M
- Cryogenic properties, of solids, 20L
- Cryopumping, 20M
- Cryosars, 20L
- Cryostats, 20M
- Crystallography, 20B
- Cultivation
  - crops & gardens, 2D
  - forests, 2F
- Cybernetics, 6D

- D -

- Damage assessment, aircraft, 1B
- Damping, acoustical, 20A
- Data flight path analysis, guided missiles, 16C
- Deception, of signals, 17D
- Decision making, 5H, 5J
- Decontamination
  - chemical & biological agents, 15B
  - radioactivity, 18B
- Decoys, 17D
- Defense, 15C
- Demolition explosives, 19A

Dentistry, 6E  
 Depth charges, 19H  
 Dermatology, 6E  
 Desalination, 7A  
 Detection  
     chemical & biological agents, 15B  
     signals & objects, 17  
 Detergents, 11K  
 Detonation, 19D  
 Detonators, 19A  
 Developmental psychology, 5J  
 Dictionaries, 5B  
 Dies, 13I  
 Digital computers, 9B  
 Diodes, semiconductor, 9A  
 Direction finding, 17C  
 Directors, weapon, 19E  
 Distributors, combustion, 21B  
 Documentation, 5B  
 Domestic animals, 2E  
 Dosimetry, 6R  
 Drama, 5F  
 Drawing (Materials processing), 13H  
 Driftmeters, 17G  
 Drives, 13I  
 Drugs, 6-0  
 Dyes  
     chemistry of, 7C  
     uses, 11C  
 Dynamic control devices, aircraft, 1D  
 Dynamic oceanography, 8C  
 Dynamics  
     fluid, 20D  
     solid, 20K

- E -

Ear protectors, 6Q  
 Earth-moving equipment, 13C  
 EARTH SCIENCES & OCEANOGRAPHY, 8  
 Earth-sun relationships, 4A  
 Ecological systems, closed, 6K  
 Ecology, 6F  
 Economics, 5C  
     agricultural, 2B  
 Econometrics, 5C  
 Education, 5I

Educational psychology, 5J  
 Elastomers, 11J  
 Electric capacitors, 10C  
 Electric circuits, 9A  
 Electric connectors, 9A  
 Electric generators, 10  
 Electric machinery, 9C  
 Electric power production, 10  
 Electric propulsion, 21C  
 Electric subsystems, 9E  
 Electric switches, 9A  
 Electric systems, 9C  
 Electrical engineering, 9C  
 Electricity, theory & physics, 20C  
 Electricity  
     generation, 10  
     theory & physics, 20C  
 Electrochemistry, 7D  
 Electrodynamics, 20C  
 Electroforming, 13H  
 Electromagnetic countermeasures, 17D  
 Electromagnetic detection, 17  
 Electromagnetic signals, 17D  
 Electromagnetic waves,  
     theory & physics of, 20F, 20N  
 Electron engines, 21C  
 Electron paramagnetic resonance spectroscopy, 7D  
 Electron tubes, 9A  
 Electronic components, 9A  
 Electronic computers, 9B  
 Electronic engineering, 9C  
 Electronic subsystems, 9E  
 Electronic systems, 9C, 17  
 Electrons, 20H  
 ELECTRONICS & ELECTRICAL ENGINEERING, 9  
 Electrophoresis  
     biochemical applications, 9A  
     theory & instrumentation, 7D  
 Electrostatic reproduction, 14E  
 Electrostatics, 20C  
 Emission spectra, 7B, C, D  
 Emittance; emissivity (thermal radiation), 20M  
 Energetic particles, atmospheric, 4A  
 ENERGY CONVERSION (NON-PROPULSIVE), 10  
 Energy storage, 10C

gines, see specific types  
 gineering, agricultural, 2C  
 thalpy, 20M  
 tomology, 6C  
 tropy, 20M  
 vironment, simulation, 14B  
 vironmental biology, 6F  
 symes, 6A  
 ations of state, 20M  
 ulilibrium, chemical, 7D  
 uipment, see specific types  
 cape, 6G  
 hnology, 5K  
 perimental psychology, 5J  
 plotions, 19D  
 platives, 19A  
 tractive metallurgy, 11F  
 trusion, 13H

- F -

ce masks, 6Q  
 csimile replication, 14E  
 ns, 13A  
 rm machinery, 2C  
 rm products, chemical process-  
 ing, 2A  
 rm structures, 2C  
 steners, 13E  
 eds, chemistry of, 2A  
 rtilizers, 2A  
 ber metallurgy, 13H  
 bers, 11E  
 eld crop production, 2D  
 lters (Engineering), 13K  
 nance, 5C  
 nishes (Materials), 11C  
 nishing (Industrial processes),  
 13H  
 re control systems (Ordnance),  
 19E  
 re detection & extinguishing  
 equipment, 13L  
 rst aid, 6E  
 ssion products, 18G

Fittings, 13E  
 Flame stability, 21B  
 Flame throwers, 19A  
 Flash locating equipment, 17H  
 Flexible wing aircraft, 1C  
 Flight, 1B  
 Flight instruments, aircraft, 1D  
 Flight safety, 1B  
 Flood control, 13B  
 Fluid flow  
     aerodynamic, 1A  
     hydrodynamic, 20D  
 Fluid mechanics, 20D  
 Foils, 13H  
 Food, 6H  
 Force constants, 7D  
 Forestry, 2F  
 Forging, 13H  
 Foundations, structural, 13M  
 Free energy, 20M  
 Free ion engines, 21C  
 Fresh water bodies, 8H  
 Fuel cells, 10A  
 Fuel injectors, 21H  
 Fuels, 21D  
     . rocket, 21I  
 Fur, 11G  
 Furnaces, 13A  
 Fusion devices, thermonuclear, 18A  
 Fuses, 19A

- G -

Gardens, 2D  
 Gas flow (Aerodynamics), 1A  
 Gas turbine engines, 21E  
 Gases  
     in chemical warfare, 15B  
     kinetic theory of, 20M  
 Gaskets, 11A  
 Gears, 13I  
 General medicine, 6L  
 Geodesy, 8E  
 Geography, 8F  
 Geology, 8G

- 46 -

Geomagnetic field theory, 8N  
 Geriatrics, 6E  
 Glasses (Materials), 11B  
 Gliders, 1C  
 Glues, 11A  
 Goats, 2E  
 Goggles, 6Q  
 Government, 5D  
 Graphic instruments (Navigation),  
     17G  
 Gravitational field theory, 8N  
 Gravity, physiological effects, 6S  
 Gravity anomalies, 8N  
 Grenades, 19A  
 Ground effect machines, 1C  
 Ground support equipment  
     aircraft, 1E  
     spacecraft, 22D  
 Ground transportation equipment,  
     13F  
 Group dynamics, 5J  
 Guidance (Navigation), 17G  
 Gun carriages, 19F  
 Gun carriers, 19C  
 Gun laying, 19E  
 Gun mounts, 19F  
 Gunfire, effect on aircraft equip-  
     ment, 1A  
 Guns, 19F

- H -

Habitability, of dwellings, 5E  
 Hangars, 1E  
 Health physics, 6R  
 Heat, physiological effects, 6S  
 Heat-resistant metals and alloys, 11F  
 Heat transfer, 20M  
 Heat treatment (Industrial process),  
     13H  
 Heating systems, 13A  
 High-temperature materials, non-  
     metal, 11B  
 High-temperature metals & alloys, 11F

Highway planning, 13B  
 History, 5D  
 Hoisting equipment, 13C  
 Homing, 17G  
 Hooks, 13E  
 Hormones, 6A  
 Horses, 2E  
 Horticulture, 2D  
 Hospital equipment & supplies, 6L  
 Human factors engineering, 5E  
 Human society, 5K  
 Humanities, 5F  
 Humidity control, 5E  
     in foreign environments, 6K  
 Hybrid computers, 9B  
 Hybrid propellants, 21I  
 Hydraulic fluids, 11H  
 Hydraulic systems & equipment, 13G  
 Hydrobombs, 19H  
 Hydrocarbons, 7C  
 Hydroduct engines, 21E  
 Hydrodynamics, 20D  
 Hydrology, 8H  
 Hydrostatics, 20D  
 Hygiene, 6I  
 Hyperons, 20H  
 Hypersonic flow, 1A

- I -

Ice, 8L  
 Immunology, 6E  
 Incendiaries, 19A  
 Industrial engineering, 13  
 Industrial medicine, 6J  
 Industrial mobilization, 15E  
 Industrial processes & processing,  
     13H  
 Industrial psychology, 5J  
 Industrial relations, 5I  
 In-flight refueling, 1B  
 Information displays, 5H  
 Information dissemination, 5B  
 Information entropy, 9D

rmation storage & retrieval, 5B  
 rmation technology, 5B  
 rmation theory, 9D  
 ared emittance (thermal emit-  
 ance), 20M  
 ared radiation  
 etection, 17E  
 heory & instrumentation, 20F  
 ared spectroscopy, 7  
 hemical applications, 7B, C, D  
 heory & instrumentation, 20F  
 ctors, rocket-fuel, 21H  
 ries, from weapons, 6U  
 ganic chemistry, 7B  
 ganic polymers, 7B  
 ct vectors, 6F  
 rument landing systems, 17G  
 rumental analysis, 7D  
 ruments, meteorological, 4B  
 lligence (Psychology), 5J  
 lligence (Military Sciences), 15D  
 rception, of signals, 17D  
 rnal medicine, 6E  
 rnational relations  
 conomic, 5C  
 olitical, 5D  
 sions, military, 15D  
 propulsion, 21C  
 zed gases, 20I  
 ers, 20E  
 gation, 2C  
 opes, 18B

- J -

ing, of signals, 17D  
 turbine engines, 21E  
 (Machinery), 13I  
 enefits, 5I  
 s (Structural engineering), 13E

- K -

Ketones, 7C  
 Kinematics, 20K  
 Kinesthesia, 5H  
 Kinetics, 7D, 20K  
 Kitchen equipment, 6H

- L -

Laboratories, 14B  
 Laboratory animals, 6C  
 Laboratory devices & equipment, 14B  
 Laboratory equipment, medical, 6L  
 Landing  
     aircraft, 1B  
     spacecraft, 22C  
 Languages, 5G  
 Lasers, 20E  
 Launch vehicles, for spacecraft, 22D  
 Law, 5D  
 Learning, 5J  
 Leather, 11G  
 Lenses, 14E  
 Library science, 5B  
 Life support, 6K  
 Lighting, 13A  
 Limmology, 8H  
 Linguistics, 5G  
 Lipids, 6A  
 Liquid-propellant rocket engines,  
     21H  
 Literature, 5F  
 Lithography, 14E  
 Logistics, 15E  
 Loran systems, 17G  
 Low-temperature phenomena, 20M  
 Lubricants, 11H

- M -

Mach number effects, 1A  
 Machine translations, 5G

Machinery, 13I  
     electric, 9C  
     farm, 2C  
 Machining, 13H  
 Magnetic detection, 17F  
 Magnetism  
     physics of, 20C  
     physiological effects, 6S  
     terrestrial, 8N  
 Magnetohydrodynamics, 20I  
 Magnetostatics, 20C  
 Man-machine relations, 5H  
 Management, 5A  
 Maps (Cartography), 8B  
 Marine engineering, 13J  
 Marine biology, 8A  
 Masers, 20E  
 Masks, 6Q  
 Mass spectrometry  
     chemical applications, 7B, C, D  
     theory & instrumentation, 20F  
 MATERIALS, 11  
 Mathematical linguistics, 5G  
 Mathematics, 12A  
 Mechanical engineering, 13  
 MATHEMATICAL SCIENCES, 12  
 MECHANICAL, INDUSTRIAL, CIVIL,  
     & MARINE ENGINEERING, 13  
 Mechanical working, 13H  
 Medical equipment, 6L  
 Medical technology, 6E  
 Medicine  
     general, 6E  
     industrial, 6J  
 Mental processes & phenomena, 5J  
 Metabolism, 6P  
 Metal carbonyls, 7B  
 Metal chelates, 7B  
 Metal foils, 13H  
 Metal forming, 13H  
 Metal ion complexes, 7B  
 Metallography, 11F  
 Metallurgy  
     extractive, 11F  
     fabrication, 13H  
     fiber, 13H

Metallurgy (cont'd)  
     physical, 11F  
     powder, 13H  
 Metals, 11F  
 Meteorology, 4B  
 METHODS & EQUIPMENT, 14  
 Microbiology, 6M  
 Microwave spectroscopy, 7D, 20F  
 Military battles & campaigns, 15G  
 Military equipment, 15E  
 Military operations, 15G  
 Military psychology, 5J  
 MILITARY SCIENCES, 15  
 Minerals, 8G  
 Mines  
     land, 19A  
     submarine, 19H  
 Mining engineering, 8I  
 Miscellaneous materials, 11G  
 MISSILE TECHNOLOGY, 16  
 Molecular structure & spectra, 7D  
 Monopoly, 5C  
 Morphology, of languages, 5G  
 Mortars, 19F  
 Motion, physiological effects, 6S  
 Motivation, 5J  
 Motors, 13G  
 Music, 5F

- N -

NAVIGATION, COMMUNICATIONS, DE-  
 TECTION, AND COUNTERMEASURES, 17  
 Neutron scattering, 18K  
 Neutron thermalization, 18J  
 Noise control, auditory, 5E  
 Noise (Information theory), 9D  
 Nuclear auxiliary power systems, 18N  
 Nuclear explosions, 18C  
 Nuclear instrumentation, 18D  
 Nuclear magnetic resonance  
     spectroscopy, 7D  
 Nuclear power plants, 18E  
 Nuclear propulsion, 21F

Nuclear radiation sickness, 6R  
Nuclear reactor  
    engineering, 18I  
Nuclear reactors & reactor  
    theory, 18J, M  
NUCLEAR SCIENCE & TECHNOLOGY, 18  
Nuclear shielding, 18J  
Nuclear warfare, 15F  
Nurseries (Horticulture), 2D  
Nursing, 6E

- 0 -

Oceanography, 8  
Oceans, 8J  
Oils, 11H  
Operations research, 12B  
Ophthalmology, 6E  
Optical detection, 17H  
Optical equipment, 20F  
Optical imaging, 20G  
Optics, 20F  
Orbital calculations, 22C  
Orbital rendezvous, 22A  
Orchards, 2D  
ORDNANCE, 19  
Organic chemistry, 7C  
Organometallic & organo-  
    metalloidal compounds, 7C

- P -

Packaging, 13D  
    food, 6H  
Paints, 11C  
Paper, 11L  
Paramagnetic resonance spectroscopy, 7D  
Paramedical sciences, 6E  
Parapsychology, 5J

Particle accelerators, 20G  
Particle physics, 20H  
Passenger vehicles, 13F  
Pathology  
    human, 6E  
    plant & animal, 6C  
Pediatrics, 6E  
Peptides, 6A  
Perception, 5J  
Periscopes, 17H  
Permafrost, 8L  
Personality adjustment, 5J  
Personnel administration, 5I  
Personnel selection  
    administrative, 5I  
    medical, 6N  
Pesticides, 6F  
Pets, 2E  
Pharmacology, 6-0  
Philosophy, 5F  
Phonology, 5G  
Photochemistry, 7E  
Photochromic replication, 14E  
Photodecomposition, 7E  
Photodetectors, 20F  
Photogrammetry, 8B  
Photography, 14E  
Photolysis, 7E  
Photometry, 7D  
Photomultipliers, 20F  
Photopolymerization, 7E  
Photosynthesis, 7E  
Photovoltaic devices, electricity  
    generation by, 10A  
Physical chemistry, 7D  
Physical fitness, 6N  
Physical metallurgy, 11F  
Physical oceanography, 8J  
Physical therapy, 6E  
Physical trauma, 6J  
PHYSICS, 20  
Physiological psychology, 5J  
Physiology, plant & animal, 6C  
Pigments, 11C



Pinch devices, 18A  
 Pinch effect, 20I  
 Pipes, 13K  
 Pitch, 20A  
 Planets, spectra, 3B  
 Plant anatomy & physiology, 6C  
 Plants (Factories), design, 13H  
 Plasma physics, 20I  
 Plasma propulsion systems, 21C  
 Plasmas (Ionized gases), 20I  
 Plasticizers, 20I  
 Plastics, 11I  
 Playback equipment, 14C  
 Pneumatic systems & equipment,  
     13G  
 Poisons, 6T  
 Polarography, 7D  
 Political science, 5D  
 Politics, 5D  
 Polymers & polymerization, 7C  
 Polymers, inorganic, 7B  
 Potentiometry, 7D  
 Powder metallurgy, 13H  
 Powder propellants, 19A  
 Powders, 11F  
 Power sources, 13G  
 Pressure broadening, 7D  
 Preventive medicine, 6E  
     industrial, 6J  
 Printing, 14E  
 Probability, 14D  
 Processing  
     farm products, 2C  
     food, 6H  
 Production control, 13H  
 Production planning, 5A  
 Program generators, 9B  
 Programming, computer, 9B  
 Programming languages, 9B  
 Projectiles, 19A  
 Projectors, 14E  
 Propellant feed systems, 21H  
 Propellant pressurization  
     systems, 21H

Propellants  
     powder, 19A  
     rocket, 21I  
 Prophylaxis, 6R  
 PROPULSION & FUELS, 21  
 Propulsion hardware, 21H  
 Prosthesis, 6E  
 Protective clothing & equipment,  
     6Q, 15B  
 Proteins, 6A  
 Psychiatry, 6E  
 Psychology, 5J  
 Psychometrics, 5J  
 Psychophysiological monitoring, 6B  
 Public relations, 5A  
 Public utilities, 13B  
 Pumps, 13K  
 Pyrotechnics, 19A

- Q -

Quality control, 13H  
 Quantum mechanics, 20J  
 Quantum statistics, 20J  
 Quantum theory, 20J

- R -

Radar detection, 17I  
 Radiation biology, 6R  
 Radiation chemistry, 7E  
 Radiation detection, 18D  
 Radiation shielding & protection, 18F  
 Radiation sickness, 6R  
 Radiators, 13A  
 Radio communication systems, 17B  
 Radioactive fallout, 18H  
 Radioactive wastes, 18G  
 Radioactivity, 18H  
 Radiobiology, 6R

Radiochemistry, 7E  
 Radioisotope thermoelectric generators,  
     10B  
 Radiological warfare, 15B  
 Radiometers, 20F  
 Railroad equipment, 13F  
 Raman spectra, 7D  
 Range finders, 19E  
 Reaction kinetics, 7D  
     of propellants, 21I  
 Reactor engineering, 18I  
 Reactors & reactor theory, 18J, M  
 Receivers, 9F  
 Reciprocating engines, 21G  
 Recoilless weapons, 19F  
 Recording devices & equipment, 14C  
 Reentry phenomena, 16B, 22C  
 Reflectance; reflectivity (thermal  
     radiation), 20M  
 Refractories, 11B  
 Refractory metals, 11F  
 Refrigerants, 11G  
 Refrigeration systems, 13A  
 Refueling, in-flight, 1B  
 Refueling systems, aircraft, 1E  
 Relativity theory, 20J  
 Reliability, 14D  
 Religion, 5F  
 Reprography, 14E  
 Rescue, 6G  
 Resins, 11I  
 Resonance, acoustical, 20A  
 Respiratory support, in foreign  
     environments, 6K  
 Reynolds number, 1A  
 Rickettsiae, 6M  
 Rivets, 13E  
 Rocket engines, 21H  
 Rocket fuel injectors, 21H  
 Rocket fuels & oxidizers, 21I  
 Rocket motors & engines, 21H  
 Rocket nozzles, 21H  
 Rocket propellants, 21I  
 Rocket-propelled weapons, 19G  
 Rockets, 19G  
 Rocks, 8G

Rotational frequencies, 7D  
 Rotating-wing aircraft, 1C  
 Rubbers, 11J  
 Runways, 1E

- S -

STOL aircraft, 1C  
 Safety  
     flight, 1B  
     industrial, 6J  
 Safety devices, 13L  
 Safety engineering, 13L  
 Sanitary engineering, 13B  
 Sanitation, 13B  
 Satellite vehicles, 22B  
 Screws, 13E  
 Seals & sealants, 11A  
 Seismic detection, 17J  
 Seismology, 8K  
 Semantics, 5G  
 Semiconductor devices, 9A, 10; 20E  
 Semiconductors, theory & physics,  
     20L  
 Semiorganic compounds, 7C  
 Sensory deprivation, 6S  
 Servomechanisms, 9E  
 Sewage treatment & disposal, 13B  
 Sextants, 17G  
 Sheep, 2E  
 Shielding materials, nuclear, 18J  
 Ships, 13J  
 Shock waves, aerodynamic, 1A  
 Shoran systems, 17G  
 Signals, see specific types  
 Small arms, 19F  
 Smoke screens, 19A  
 SNAP technology, 18N  
 Snow, 8L  
 Soaps, 11K  
 Social psychology, 5J  
 Social sciences, 5  
 Sociology, 5K  
 Soil conservation, 2C

- Soil mechanics, 8M
- Solar cells, 10A
- Solar concentrators, 10B
- Solar-terrestrial relationships, 4A
- Solid mechanics, 20K
- Solid-propellant rocket engines, 21H
- Solid propellants, 21I
- Solid-state physics, 20L
- Solutions, 7D
- Solvent shifts, 7D
- Solvents, 11K
- Sonar, 17A
- Sound, physics of, 20A
- Sound ranging & location, 17A
- Space capsules, design & construction, 22B
- Space environment, physiological effects, 6S
- Space exploration, 22A
- Space probes, design & construction, 22B
- Space stations, 22A
- Space vehicles, 22B
- SPACE TECHNOLOGY, 22
- Spacecraft, 22B
- Spacecraft launch vehicles, 22D
- Spacecraft trajectories & reentry, 22C
- Spaceports, 22D
- Spaceships, 22B
- Spark plugs, 21B
- Spectra
  - inorganic compounds, 7B
  - organic compounds, 7C
  - stars, 3B
- Spectroscopy
  - astronomical, 3B
  - chemical applications, 7B, C, D
  - radiofrequency, 20N
  - theory & instrumentation, 20F
- Springs, 13I
- Stability & control
  - aircraft, 1D
  - spacecraft, 22C
- Stars, spectra, 3B
- Static control devices, aircraft, 1D

- Statics
  - fluids, 20D
  - solids, 20K
- Statistics, 12A
- Steroids, 6A
- Storage
  - chemicals, 7A
  - food, 6H
- Strategy, military, 15G
- Stress analysis, 20K
- Stress physiology, 6S
- Structural engineering, 13M
- Structures, 13M
- Subatomic particles, 20H
- Subsonic flow, 1A
- Subsystems, electrical-electronic, 9E
- Sun-earth relationships, 4A
- Superconductivity, 20L
- Supersonic flow, 1A
- Surface chemistry, 7D
- Surgery, 6E
- Survival, 6G
- Swine, 2E
- Switches, electrical, 9A
- Synchros (Servomotors), 9E
- Syntax, 5G

- T -

- Tactical kinesthesia, 5H
- Tactics, military, 15G
- Takeoff, aircraft, 1B
- Tanks (Combat vehicles), 19C
- Tanks (Containers)
  - propellants, 21H
  - storage, 13D
- Tape recorders, 14C
- Teaching aids, 5I
- Telegraph, 17B
- Telemetry, 9F
- Telephones, 17B
- Telescopes, 17H

Teletypes, 17B  
 Television, 17B  
 Temperature control  
     in foreign environments, 6K  
     for humans, 5E  
 Terminology, 5B  
 Terpenes, 7C  
 Terrestrial magnetism, 8N  
 Test equipment, 14B  
     electric & electronic, 9C  
 Test facilities, 14B  
 Textiles, 11E  
 Theodolites, 17H  
 Thermal emittance, 20M  
 Thermal radiation, 20M  
 Thermionic converters, 10A  
 Thermistors, 9A  
 Thermochemistry, 7D  
     of propellants, 21I  
 Thermodynamics  
     chemical, 7D  
     physical, 20M  
 Thermoelectric generators, 10A  
 Thermography, 14E  
 Thermoplastic recording, 14E  
 Thesauri, 5B  
 Thin-film devices, 9A  
 Thin films, deposition techniques,  
     20L  
 Threads (Materials), 11E  
 Tools, 13I  
 Torpedoes, 19H  
 Toxic exposure, 6J  
 Toxicology, 6T  
 Track-laying vehicles, 19C  
 Trade, 5C  
 Training, 5I  
 Transistors, 9A  
 Transmittance; transmissivity (thermal  
     radiation), 9A  
 Transmitters, 9F  
 Transonic flow, 1A  
 Transport  
     of chemicals, 7A  
     of troops, 15E

Tubing, 13K  
 Turbogenerators, 10A  
 Turboprop engines, 21E

- U -

Ultraviolet radiation  
     detection, 17E  
     theory, 20F  
 Ultraviolet spectroscopy  
     chemical applications, 7B, C, D  
     theory & instrumentation, 20F  
 Uncertainty (Information theory),  
     9D  
 Underwater ordnance, 19H  
 Unit operations, 7A  
 Urban planning & renewal, 13B  
 Uvasers, 20E

- V -

VTOL aircraft, 1C  
 Valves, 13K  
 Varistors, 9A  
 Varnishes, 11C  
 Vehicles, see specific types  
 Ventilation, 13A  
 Veterinary medicine, 2E  
 Vibrational frequencies, 7D  
 Vibratory systems, 20A  
 Vibronic spectra, 7D  
 Viruses, 6M  
 Visual spectra, of chemicals,  
     7B, C, D  
 Vitamins, 6A  
 Vulnerability studies, 1B

- W -

Wages, 5I

Waste disposal, 13B  
Water  
    conservation, 2C  
    occurrence & properties, 8H  
    supply, 13B  
Water pollution, 13B  
Water tunnels, 14B  
Waterborne aircraft, 1C  
Wave propagation, 20N  
Weapon directors, 19E  
Weapon effects, 6U  
Weather forecasting, 4B  
Welding, 13H

Well drilling, 13B  
Wind tunnels, 14B  
Wire recorders, 14C  
Wood products, 11L  
Wounds, 6U

- X,Y,Z -

X-ray spectra, 7B, C, D  
Yarns, 11E  
Zoology, 6C